

METHOD FOR FILLING A HOLE WITH A METAL

ABSTRACT OF THE DISCLOSURE

In a method for filling a hole with a metal, an insulating layer, a first mask layer and a
5 second mask layer are successively formed on a semiconductor substrate. The first and second
mask layers are etched using a photoresist pattern to form first and second masks. The first
mask layer pattern is selectively etched using an etchant, the first mask layer pattern having a
higher etching selectivity than the second layer pattern with respect to the etchant, to form a
third mask layer pattern having a broadened opening. The insulating layer is etched using the
10 second mask to form a hole in the insulating layer. A metal layer is formed in the hole and the
third opening. The metal layer is planarized to form a metal plug buried in the hole without
recesses or voids.